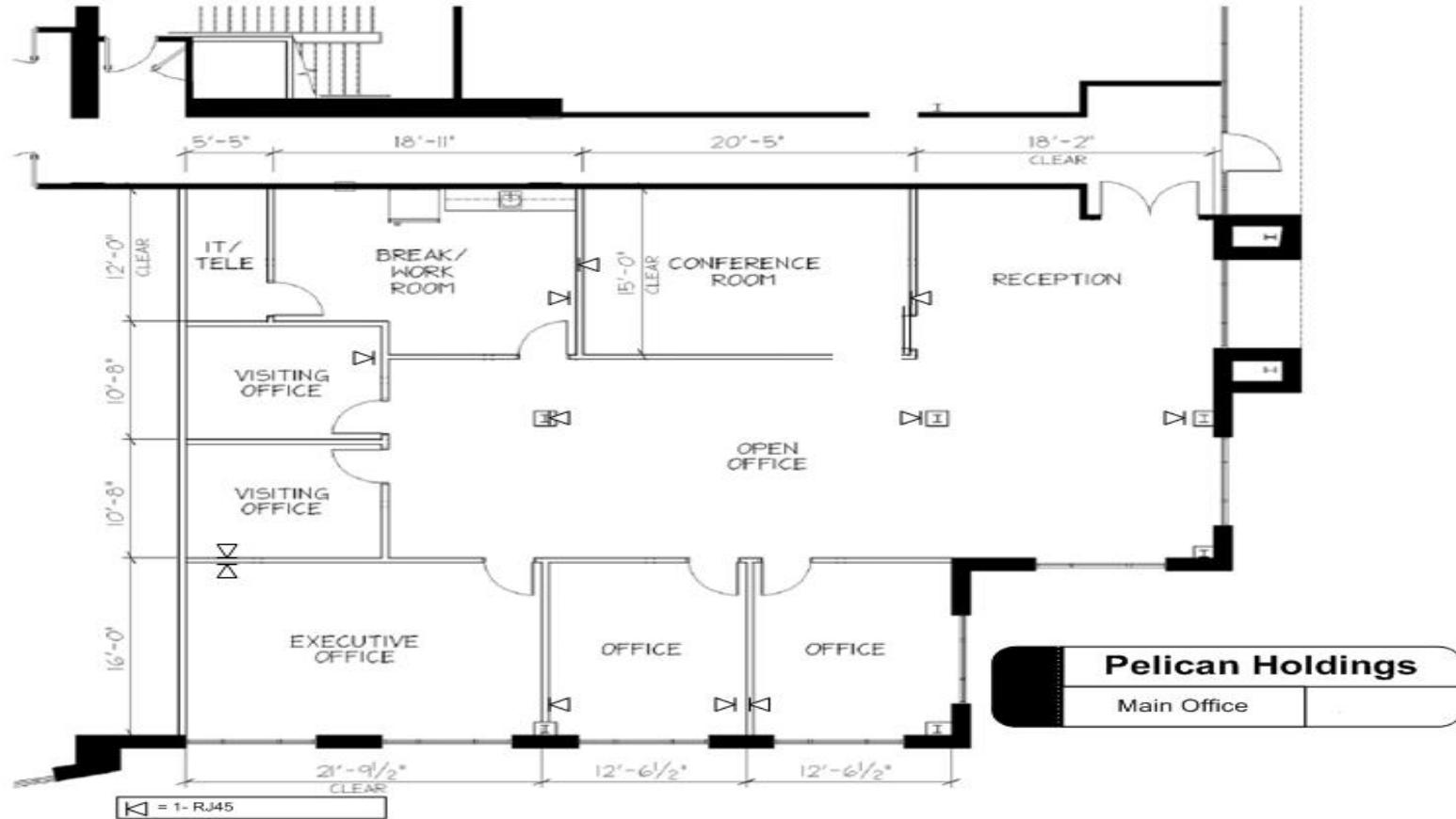


Project: Design of a Small Business Network

A Request for Proposal (RFP) is invited for a design of a new Local Area Network (LAN) for a business headquarter for Pelican Holdings. The Headquarters office is in a new building, as shown in figure 1.



The successful proposal should implement a high speed switched Gigabit Ethernet LAN for the Headquarters office. All Office walls will be of standard 1" plasterboard over metal studs. The ceiling of the suite will be a dropped ceiling plenum air-return system. No wiring troughs (cable trays) are currently installed in the suite. Due to the small size of the office, no troughs will be required. Instead all cabling must be neatly supported on the walls above the drop ceiling. All cabling will be fished through the walls.

The headquarters network will utilize *MS Windows 2012 Server Enterprise Edition* and any Linux Distribution for its server infrastructure's operating system and *Windows 7* for its users' workstations. PLS will host the following server infrastructure:

1. A Linux based Apache Web server,
2. A Linux based DNS server,
3. A Linux mail server and
4. A Windows based Oracle DB server running server enterprise edition.

The design will install four new servers such as listed above. It is required that *the new Servers* be located in the DMZ. Number of users' workstations is equal to the number of network drops (triangles) outlined in Figure 1. All systems will be equipped with Gigabit Ethernet Network Interface cards. Additionally, wireless coverage should be provided with 3 access points. All the networking equipment and servers should be stored in IT/TELE room on a rack.

The company is looking for 1Gbps for the LAN circuit and at least a 1Gbps for the uplink (connection to the Internet and rest of the world). DMZ should be implemented with appropriate firewall appliances.

Project Deliverables

Your report should include the following (each worth 20 points).

1. Logical Network Diagram
2. Physical Network Diagram (wiring diagram on the floor plan)
3. IP address management
4. Hardware and Software list
5. Diagram of the Equipment Room and its Racks with all installed equipment. This diagram should show how equipment is connected to each other.

There would be one router

3 subnetworks

Guest network for the two visiting offices

DMZ

Network 1

Start with ip address:

192.168.241

Executive and Receptionist on same network

12 Hosts on the network

Hardware & Software on the List

12 Computers

Windows 7 Enterprise

Office 2016 Suite